Impact Of IT in Education:

Saad Ahmad
20P-0051

1. Planning:

With the widespread availability of student databases that are able to track individual progress, teachers are encouraged to identify learning objectives and differentiate instruction based on the needs of their students.

Whenever teachers attempt to present instruction using technology, they should do so using a channel that is relevant to the objectives, the learning style, mode and the technology selected.

When evaluating technology-based instruction, there needs to be appropriate evaluation techniques that are in line with the methods of instruction, objectives and the technology.

Teachers can design follow-up activities when using technology to evaluate students' learning and the role technology played in that process.

Overall, technology is central to many sectors of society and its integration into the education process has great promise for student learning. With technology, one can expect increased efficiency and effectiveness on both the part of teachers and students. Technology can also prompt pedagogical change and address issues that affect learning, teaching and social organization. Technology can therefore be seen as both a tool and a catalyst for change. Students should embrace technology for them to benefit and teachers should be open to introducing technology into the classroom to improve and innovate their teaching practice.

Many of today's high-demand jobs were created in the last decade, according to the International Society for Technology in Education (ISTE). As advances in technology drive globalization and digital transformation, teachers can help students acquire the necessary skills to succeed in the careers of the future.

How important is technology in education? The COVID-19 pandemic is quickly demonstrating why online education should be a vital part of teaching and learning. By integrating technology into existing curricula, as opposed to using it solely as a crisis-management tool, teachers can harness online learning as a powerful educational tool.

The effective use of digital learning tools in classrooms can increase student engagement, help teachers improve their lesson plans, and facilitate personalized learning. It also helps students build essential 21st-century skills.

Virtual classrooms, video, augmented reality (AR), robots, and other technology tools can not only make class livelier, they can also create more inclusive learning environments that foster collaboration and inquisitiveness and enable teachers to collect data on student performance.

Still, it's important to note that technology is a tool used in education and not an end in itself. The promise of educational technology lies in what educators do with it and how it is used to best support their students' needs.

- **Educational Technology Challenges**

Built-in reports that 92 percent of teachers understand the impact of technology in education. According to Project Tomorrow, 59 percent of middle school students say digital educational tools have helped them with their grades and test scores. These tools have become so popular that the educational technology market is projected to expand to $342 billion by 2025, according to the World Economic Forum.

However, educational technology has its challenges, particularly when it comes to implementation and use. For example, despite growing interest in the use of AR, artificial intelligence, and other emerging technology, less than 10 percent of schools report having these tools in their classrooms, according to Project Tomorrow. Additional concerns include excessive screen time, the effectiveness of teachers using the technology, and worries about technology equity.

Prominently rising from the COVID-19 crisis is the issue of content. Educators need to be able to develop and weigh in on online educational content, especially to encourage students to consider a topic from different perspectives. The urgent actions taken during this crisis did not provide sufficient time for this. Access is an added concern — for example, not every school district has resources to provide students with a laptop, and internet connectivity can be unreliable in homes.

Additionally, while some students thrive in online education settings, others lag for various factors, including support resources. For example, a student who already struggled in face-to-face environments may struggle even more in the current situation. These students may have relied on resources that they no longer have in their homes.

Still, most students typically demonstrate confidence in using online education when they have the resources, as studies have suggested. However, online education may pose challenges for teachers, especially in places where it has not been the norm.

Despite the challenges and concerns, it's important to note the benefits of technology in education, including increased collaboration and communication, improved quality of education, and engaging lessons that help spark imagination and a search for knowledge in students.

- **The Benefits of Technology in Education**

Teachers want to improve student performance, and technology can help them accomplish this aim. To mitigate the challenges, administrators should help teachers gain the competencies needed to enhance learning for students through technology. Additionally, technology in the classroom should make teachers' jobs easier without adding extra time to their day.

Technology provides students with easy-to-access information, accelerated learning, and fun opportunities to practice what they learn. It enables students to explore new subjects and deepen their

understanding of difficult concepts, particularly in STEM. Through the use of technology inside and outside the classroom, students can gain 21st-century technical skills necessary for future occupations.

Still, children learn more effectively with direction. The World Economic Forum reports that while technology can help young students learn and acquire knowledge through play, for example, evidence suggests that learning is more effective through guidance from an adult, such as a teacher.

Leaders and administrators should take stock of where their faculty are in terms of their understanding of online spaces. From lessons learned during this disruptive time, they can implement solutions now for the future. For example, administrators could give teachers a week or two to think carefully about how to teach courses not previously online. In addition to an exploration of solutions, flexibility during these trying times is of paramount importance.

Below are examples of how important technology being in education and the benefits it offers to students and teachers.

- **Increased Collaboration and Communication**

Educational technology can foster collaboration. Not only can teachers engage with students during lessons, but students can also communicate with each other. Through online lessons and

learning games, students get to work together to solve problems. In collaborative activities, students can share their thoughts and ideas and support each other. At the same time, technology enables one-on-one interaction with teachers. Students can ask classroom-related questions and seek additional help on difficult-to-understand subject matter. At home, students can upload their homework, and teachers can access and view completed assignments using their laptops.

• Personalized Learning Opportunities

Technology allows 24/7 access to educational resources. Classes can take place entirely online via the use of a laptop or mobile device. Hybrid versions of learning combine the use of technology from anywhere with regular in-person classroom sessions. In both scenarios, the use of technology to tailor learning plans for each student is possible. Teachers can create lessons based on student interests and strengths. An added benefit is that students can learn at their own pace. When they need to review class material to get a better understanding of essential concepts, students can review videos in the lesson plan. The data generated through these online activities enable teachers to see which students struggled with certain subjects and offer additional assistance and support.

• Curiosity Driven by Engaging Content

Through engaging and educational content, teachers can spark inquisitiveness in children and boost their curiosity, which research says has ties to academic success. Curiosity helps

students get a better understanding of math and reading concepts. Creating engaging content can involve the use of AR, videos, or podcasts. For example, when submitting assignments, students can include videos or interact with students from across the globe.

# 2.	Organizing:

We examine the role of service co-production in IT industry. We adopt a technology-organization-environment (TOE) framework to discuss the effects of TOE openness on firm performance. A total of 210 usable IT-service managers were collected from a sample of 750 Taiwanese IT companies. Service co-production plays a mediating role in the relationships between openness of organization and environment and firm performance. Process reaches and richness moderates the relationship between service coproduction and firm performance. Service co-production has become an influential collaboration. Openness, however, also plays an important role in creating opportunities for superior firm performance that can shape a firm's open-related strategies and decisions. Drawing on a technology-organization-environment (TOE) framework, this study primarily examines the relationships between TOE openness, service co-production, digital-resource readiness, and firm performance. Data were collected from 210 IT companies in Taiwan; IT service managers were selected as the data collection sources. A partial least square (PLS) was used to address sophisticated data analysis issues. The empirical evidence indicates that the increased openness of both organization and environment can facilitate superior firm performance primarily through improving service co-production. In addition, process

reach and richness can enhance the relationship between service co-production and firm performance. The detailed findings offer practical suggestions for IT firms that seek to attain superior firm performance by optimizing limited resources to foster the openness of their corporate culture and invest in collaborative relationships in conjunction with increased service co-production. In addition, IT firms can manage digital process reach and richness to ensure the fulfillment of various needs and strengthen efforts in firm performance through service co-production.

3.   Leading:

Technology has impacted almost every aspect of life today, and education is no exception. Or is it? In some ways, education seems much the same as it has been for many years. A 14th century illustration by Laurentius de Voltolina depicts a university lecture in medieval Italy. The scene is easily recognizable because of its parallels to the modern day. The teacher lectures from a podium at the front of the room while the students sit in rows and listen. Some of the students have books open in front of them and appear to be following along. A few looks bored. Some are talking to their neighbors. One appears to be sleeping. Classrooms today do not look much different, though you might find modern students looking at their laptops, tablets, or smart phones instead of books (though probably open to Facebook). A cynic would say that technology has done nothing to change education.

However, in many ways, technology has profoundly changed education. For one, technology has greatly expanded access to education. In medieval times, books were rare and only an elite few had access to educational opportunities. Individuals had to travel to centers of learning to get an education. Today, massive amounts of information (books, audio, images, videos) are available at one's fingertips through the Internet, and opportunities for formal learning are available online worldwide through the Khan Academy, MOOCs, podcasts, traditional online degree programs, and more. Access to learning opportunities today is unprecedented in scope thanks to technology.

Opportunities for communication and collaboration have also been expanded by technology. Traditionally, classrooms have been relatively isolated, and collaboration has been limited to other students in the same classroom or building. Today, technology enables forms of communication and collaboration unlike in the past. Students in a classroom in the rural U.S., for example, can learn about the Arctic by following the expedition of a team of scientists in the region, read scientists' blog posting, view photos, e-mail questions to the scientists, and even talk live with the scientists via a videoconference. Students can share what they are learning with students in other classrooms in other states who are tracking the same expedition. Students can collaborate on group projects using technology-based tools such as wikis and Google docs. The walls of the classrooms are no longer a barrier as technology enables new ways of learning, communicating, and working collaboratively.

Technology has also begun to change the roles of teachers and learners. In the traditional classroom, such as what we see depicted in de Voltolina's illustration, the teacher is the primary source of information, and the learners passively receive it. This model of the teacher as the "sage on the stage" has been in education for a long time, and it is still very much in evidence today. However, because of the access to information and educational opportunity that technology has enabled, in many classrooms today we see the teacher's role shifting to the "guide on the side" as students take more responsibility for their own learning using technology to gather relevant information. Schools and universities across the country are beginning to redesign learning spaces to enable this new model of education, foster more interaction and small group work, and use technology as an enabler.

Technology is a powerful tool that can support and transform education in many ways, from making it easier for teachers to create instructional materials to enabling new ways for people to learn and work together. With the worldwide reach of the Internet and the ubiquity of smart devices that can connect to it, a new age of anytime anywhere education is dawning. It will be up to instructional designers and educational technologies to make the most of the opportunities provided by technology to change education so that effective and efficient education is available to everyone everywhere.

4. Controlling:

When a Stanford University professor offered a free online course in artificial intelligence, he had no idea that the experiment would attract 160,000 students from 190 countries and generate a wave of publicity.

That's one of many examples of how technology is reshaping education around the world. From the rapid proliferation of massive open online courses, or MOOCs, to the widespread use of mobile devices that support a variety of "blended learning" models (part online, part bricks-and-mortar based), technology is creating new challenges and many new opportunities for educational institutions of all types, from early education to universities.

"Technology is changing the dynamics of education, especially the relationship between teachers and students. As educators begin to rethink the learning experience, we believe it will be important to also reshape educational spaces to support this evolution," says Andrew Kim, a Steelcase Workspace Futures researcher and a member of the Steelcase Education Solutions team that has been investigating the spatial implications of learning and technology. So far, the study has involved observing and interviewing students and teachers at 20 schools.